AN *IN VIVO* SCREEN USING CHEMICAL INDUCERS OF DIMERIZATION

Abstract of the Disclosure

The subject invention provides a compound having the formula:

H1 - X - B - Y - H2

wherein each of H1 and H2 may be the same or different and capable of binding to a receptor which is the same or different; wherein each of X and Y may be present or absent and if present, each may be the same or different spacer moiety; and wherein B is an enzyme cleavable moiety. In an embodiment, H1 can be methotrexate. This invention also provides a method of screening proteins for the ability to catalyze bond cleavage, and for the ability to catalyze bond formation.

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~~a) providing a cell that expresses a pair of fusion proteins which upon dimerization change a cellular readout;~~

~~b) providing the compound of the invention which dimerizes the pair of fusion proteins, said compound comprising two portions coupled by a bond that is cleavable by the protein to be screened; and~~

~~c) screening for the cellular readout, wherein a change the cellular readout indicates catalysis of bond cleavage by the protein to be screened. Finally, the invention also provides a method of screening proteins for the ability to catalyze bond formation, comprising the steps of:~~

~~a) providing a cell that expresses a pair of fusion proteins which upon dimerization activate a cellular readout:~~

~~b) providing a first compound and a second compound, each being capable of binding to one of the pair of fusion proteins, said first and second compound comprising a portion through which the first and second compounds are coupled to form the inventive compound by the action of the bond forming protein to be screened; and~~

~~c) screening for the cellular readout, wherein a change in the cellular readout indicates catalysis of bond formation by the protein to be screened.~~